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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/519,476

12/30/2004

Dong-Hee Lee

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01/08/2009

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EXAMINER

BUI, PHUONG T

ART UNIT

PAPER NUMBER

1638

NOTIFICATION DATE

DELIVERY MODE

01/08/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ADIPFDD@bipc.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/519,476	<b>Applicant(s)</b> LEE ET AL.	
	<b>Examiner</b> Phuong T. Bui	<b>Art Unit</b> 1638	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 1-16 and 19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 17 and 18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. The Office acknowledges the receipt of Applicant's amendment filed September 22, 2008. Claims 1-19 are pending. Claims 1-16 and 19 have been withdrawn from consideration as being drawn to nonelected inventions. Claims 17 and 18 are examined in the instant application.

All previous rejections not set forth below have been withdrawn.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

This action is made FINAL.

#### ***Claim Rejections - 35 USC § 103***

2. Claims 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishige (USPN 6337430) in view of Bevan et al. (UniProt\_8.4 Database, Accession No. Q9LZ63, Direct Submission, 4/20/00) and Allen (US 2001/0039042). This rejection is maintained for reasons of record.

Applicant traverses primarily that Ishige teaches a promoter; Bevan teaches an 8-amino-7-oxononanoate synthase-like protein; Allen teaches plant biotin synthase; and these references taken alone or in combination do not teach or suggest the function of plant KAPA synthase. Applicant further argues that bacterial 8-amino-7-oxononanoate synthase has less than 40% sequence identity to that of plant; Applicant is the first to isolate plant 8-amino-7-oxononanoate synthase; and Allen does not teach or suggest the role of 8-amino-7-oxononanoate synthase in plant biotin synthetic pathway.

Applicant's traversals have been carefully considered but are deemed unpersuasive for the following reasons. Applicant's arguments are not commensurate in scope with the claimed invention. Ishige was relied on for the general teaching of gene suppression by using sense or antisense technology and the desirability of suppressing biotin synthesis. The sequence identity between bacterial 8-amino-7-oxononanoate synthase and that of plant is not relevant here. Bevan teaches a sequence from *Arabidopsis* (a plant) which has 100% sequence identity to Applicant's SEQ ID NO:2. Thus, the assertion that Applicant is the first to isolate this protein from plant does not appear to be correct. Allen was relied on for the teaching that an enzyme in the biotin synthesis pathway (biotin synthase) is a useful target for herbicides because loss of the enzyme leads to an embryo defective phenotype. Thus, given the technology available for gene suppression, the desirability to target an enzyme involved in biotin synthesis to inhibit plant growth, and the disclosure of SEQ ID NO:2 (a biotin synthesis enzyme), one skilled in the art would have been motivated to target SEQ ID NO:2 to suppress biotin synthesis and subsequently plant growth with a reasonable expectation of success. While Bevan calls SEQ ID NO:2 an 8-amino-7-oxononanoate synthase, and Applicant refers to the enzyme as 7-keto-8-aminopelargonic acid synthase, it is the identical sequence involved in biotin synthesis. By way of elucidation and not an introduction of an additional reference in the obviousness rejection, Schechter (USPN 6955890, filed May 10, 2002 (A)) teaches 8-amino-7-oxononanoate synthase is one of five crucial enzymes in the biotin synthesis pathway (col. 27, Ins. 64-67). Thus, it was well known in the art at the time the invention was made that 8-amino-

7-oxononanoate synthase, identical to Applicant's 7-keto-8-aminopelargonic acid synthase, is involved in biotin synthesis, contrary to Applicant's assertion. Accordingly, it would have been *prima facie* obvious for one skilled in the art at the time the invention was made to generate the claimed invention without any surprising or unexpected results.

### **Conclusion**

3. No claim is allowed.
4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communications from the Examiner should be directed to Phuong Bui, whose telephone number 571-272-0793.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Anne Marie Grunberg, can be reached at 571-272-0975.

The fax phone number for the organization where this application or proceeding is assigned, for sending official correspondence, is 571-273-8300.

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight

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(EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet.

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For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

/Phuong T. Bui/

Primary Examiner, Art Unit 1638

1/2/09